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Paint Roller Cleaner

FIELD OF THE INVENTION

The paint roller cleaner of the present invention is used to clean excess paint from a paint roller after use. The cleaner of the invention is directed to both the professional
5 and the domestic markets.

BACKGROUND OF THE INVENTION

Paint rollers are widely used as a practical means of rapidly painting any surface. The roller operated by temporarily absorbing substantial quantities of paint and releasing this under pressure in the rolling action. Depending on the type of paint to be applied,
10 the surface to be painted and the desired finish a paint roller may be formed of a sponge material or a fleecy wool fibre. Other types of rollers are used but perhaps less commonly.

However it can be observed that in most cases once the painter has finished the roller still retains significant quantities of paint in the nap of the roller. This presents several
15 difficulties to the operator. Firstly, paint is expensive and it is undesirable that large quantities should be wasted. There is therefore a need to retrieve as much paint as possible from the roller for later use. Secondly, if paint is allowed to dry on the roller it hardens and renders the roller useless for future use, again a significant cost to the user. There is therefore a need to clean the roller thoroughly for future use.

20 Cleaning paint from a roller presents its own set of difficulties to the user. Paint typically includes a dispersion of finely divided particles in solvents and pigments. Removing all traces of paint sufficient to avoid clogging the roller as described and also to avoid the risk of contaminating any future paint used on the roller has in the past required very large quantities of water and can be very messy. More importantly the disposal of solvents
25 and paint waste into the domestic waste water system is environmentally undesirable and in some locations prohibited by legislation.

There is therefore a need for paint rollers to be able to be cleaned in a manner that minimises water usage and that confines any water or cleaning fluid for collection and separate disposal

Paint roller cleaners are known from the prior art in various forms. The inventor of the present invention has identified a number of difficulties with known prior art forms of cleaners. In some instances large volumes of water are used in the cleaning process thereby creating a problem related to the disposal of the contaminated water. In other
5 prior art systems water is used to clean significant quantities of paint from a roller. This situation leads to both the disposal problems noted above and is, of course also very wasteful of paint.

A further significant difficulty associated with known paint roller cleaning assemblies occurs as a result of the necessity of handling a paint roller charged with paint to be
10 cleaned. In many cases, in order to secure a paint roller in a cleaning apparatus the paint roller has to be separated from its handle, or at least, the operator will need to grasp the roller in a way that makes close contact between the operator and paint charged roller inevitable. The operator's hands thus become significantly affected by paint contamination and therefore need cleaning as well.

15 The present invention addresses itself to the above situation and presents an alternative to prior art paint roller cleaners.

SUMMARY OF THE INVENTION

Therefore, according to a first aspect of the present invention, there is provided a paint roller cleaner including:

20 a cylindrical housing having an opening adapted to receive a paint roller, said opening having associated therewith an outer flange portion for removing paint from said paint roller, and said cylindrical housing being a very close fit around said paint roller for removing further paint therefrom, said removal of paint constituting a first cleaning action on said paint roller; and
25 external locking means for securing said paint roller in said cylindrical housing, said external locking means attaching to a handle of said paint roller whereby said paint roller is restrained from movement relative to the housing by the locking means, and whereby cleaning fluid is introduced into the housing under pressure to thereby effect a second cleaning action on said paint roller.

30 The paint roller cleaner of the invention is thereby secured in the cleaner housing by using the locking means to secure the roller handle to the housing. The locking

preferably also serves to maintain the position of the roller with respect to the housing. Many prior art cleaner devices rely on the use of a tangential stream of water or cleaning fluid to cause a rotation in the roller which then sheds entrained water through centrifugal action. In the case of the present invention the paint roller is not required to
5 move and the second cleaning action occurs under pressure of fluid in the housing.

In a further form of the invention the position locking means includes a hook member designed to lock around and restrain a handle of a paint roller thereby securing the roller with respect to the cleaner for use. There is thus no requirement to remove the handle from the device to complete the cleaning operation.

- 10 In preference, the locking means is preferably located close to the opening of the housing in which the paint roller is received, thereby ensuring that all of the roller is received in the housing.

Preferably, the locking means is a hook is upstanding from an outer surface of the housing and generally in line axially therewith said walls curving around to join one
15 another thereby forming the hook end portion .

Conveniently, the locking means is a snap fit locking means.

Preferably, the flange is positioned perpendicular to the axis of the housing.

- More preferably, still an outer edge of the flange has a semi-circular indent serving as a scrapper that may be used to remove excess paint held in a roller before the roller is
20 inserted into the housing.

Preferably, said cleaner further includes a pressure relief means. The pressure relief means may take the form of a plug with a vent opening closed by a plug, said plug being able to be released by pressure within the housing.

The above and other objects, features, and advantages of the present invention will be apparent from the following detailed description of a preferred embodiment in conjunction with the accompanying drawings. In the drawings:

5 Figure 1 illustrates in perspective view a paint roller cleaner in accordance with the present invention;

Figure 2 shows a further view of the paint roller cleaner of figure 1;

Figure 3 shows the paint roller cleaner of figure 1 with a paint roller inserted therein;

Figure 4 shows the paint roller cleaner of figure 1 in cross sectional view; and

10 Figure 5 illustrates a detail of the pressure relief plug.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The following detailed description of the invention refers to the accompanying drawings. Although the description includes exemplary embodiments, other embodiments are possible, and changes may be made to the embodiments described without departing
15 from the spirit and scope of the invention. Wherever possible, the same reference numbers will be used throughout the drawings and the following description to refer to the same and like parts.

Illustrated in the drawings is a paint roller cleaner 10 formed in accordance with the invention. The paint roller cleaner 10 operates to clean traditional paint rollers as used
20 both domestically and the longer rollers used by professional painters.

The paint roller cleaner 10 includes a generally tubular housing 12 having a first inlet end 14 and a second open, outlet end 16. The open outlet end 16 is open so as to receive a paint roller therein. The inlet end 14 terminates in a narrow spigot 18 that serves as a point of connection for a source of cleaning fluid such as water. A seal 20
25 ensures that a fluid tight connection is made even where the fluid is pressurized.

As will be appreciated, the many paints today are water based and hence paint rollers are mainly cleaned in water. However, there is no reason why the device of the

invention could not be used with other cleaning fluids. Thus references to cleaning water in the following description can be taken to incorporate other cleaning fluids as appropriate for other paint types. Typically, therefore, the spigot 18 would be attached to a hose or other mains water source. It will also be appreciated that the cleaning
5 device of the invention uses substantially less water than prior art cleaning devices and thus it is possible for the inlet 14 to be connected to a small discrete cleaning fluid supply source.

It is convenient if the housing 12 is partially translucent, it is thus possible for the operation of the device to be visible to the operator.

10 The open outlet end 16 has an outer flange portion 22 around the open end. The flange 22 extends circumferentially around the outlet end 16 and is generally perpendicular to the axis of the housing 12. An outer edge of the flange 22 has a semi-circular indent 26. The indent 26 serves, in use, as a scraper that may be used to remove excess paint held in a roller before the roller is inserted into the housing 12.

15 In the drawings it can be seen that the housing 12 is shaped to hold a paint roller 24 therein. The diameter of the housing 12 is very close to that of the paint roller 24. Thus, as the paint roller 24 is inserted into the housing 12, as shown in figures 1 and 2, any excess paint held on the roller 24 is squeezed off the roller 24.

Thus, in a first cleaning action paint can be removed from the roller by scraping the
20 roller on the indent 26 outlet flange 22 and by the act of inserting the roller 24 into the housing 12. Paint collected in this way is easily collected and returned to a tin or other storage device for reuse.

It should be noted that this action occurs simply and without the need for the user to handle the roller 24. Thus, any contact between the user and the roller 24 is
25 minimised, thereby reducing the opportunity for paint to spread onto the body and clothes of the user.

The outlet flange 22 further includes therein a hook 28. The hook 28 is formed by parallel side walls 30a and 30b upstanding from an outer surface of the housing 12 and generally in line axially therewith. The walls 30a, 30b pass through the flange 22 and
30 curve around to join one another thereby forming a hook end portion 28. As shown in figure 2 the roller support handle 32 is a snap fit under the hook 28.

Thus, as the roller 24 is gradually inserted in the housing 12 the outlet flange 22 and hook 28 encounters the roller handle 32. By rotating the handle 32 it is possible to secure the handle 32 in the hook 28 such that the roller 24 is retained in the housing 12 and is restrained from further movement relative to the housing 12. Importantly, it can be seen that the roller positioning of the roller 24 in the device 10 does not require that the operator comes into contact with the surface of the roller 24 and only the handle 32 of the roller needs to be contacted.

In a second cleaning stage, therefore, a roller 24 is ensconced in the body of the housing 12 and is retained by the hook 28. The close fit between the interior surface of the housing 12 and the roller 24 further assures the position of the roller. Cleaning water is introduced into the device 10 through the inlet spigot 18 and under pressure forces out any paint entrained on the nap of the roller 24.

In the embodiment of the invention under consideration the device 10 is also provided with a pressure relief plug 34, as illustrated in detail in figures 4 and 5. The housing 12 is provided with a vent opening 36 close to the inlet 14. The relief pug 34 is attached around the spigot 18 and is, under normal conditions, used to close the vent opening 36. To ensure that the plug remains in position it is provided with slightly oversize end projection that fits over the vent opening 36 securing the plug 34 in position. In the case where a pressure build-up occurs within the housing 12, the plug 34 is released as shown in the dotted detail of figure 4

In use, the device 10 of the invention is used in a first cleaning action to scrape any excess paint off the roller 24 using the scrapper 26 and by the act of inserting the roller in 24 into the housing 12.

In the second cleaning stage the spigot 18 is attached to a water supply and the water run through the housing under pressure. from the roller. It is evident that there is very little free space within the housing 12 when it is occupied by the roller 24. Accordingly, the fluid in the housing 12 is subject to pressure and penetrates the nap of the roller 24 releasing the paint without needing large volumes of the fluid.

To further ensure complete removal of paint from the roller the roller 24 can be released from engagement with the hook 28 and then rotated in the housing 12. The rotation process allows the fibres of the roller to be gently moved to ensure that all entrained paint is removed.

By observing the water emerging from the device it is possible to determine when the paint has been cleaned from the roller.

Further advantages and improvements may very well be made to the present invention without deviating from its scope. Although the invention has been shown and
5 described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope and spirit of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices and apparatus.